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## Paul Hindemith's "Sonata" for Trombone: A Performance Analysis.

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PAUL HINDEMITH'S SONATA FOR TROMBONE:  
A PERFORMANCE ANALYSIS

A Written Document

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Musical Arts

in

The School of Music

by

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## ABSTRACT

Paul Hindemith's *Sonata* for trombone (1941) is performed frequently on recitals and recordings and has become an important part of the solo trombone repertory. Because of its stature as a cornerstone of twentieth-century solo trombone literature, it is deserving of thorough analysis of its formal plan and harmonic structure. This paper and its accompanying lecture-recital focus on these aspects of the sonata, and on how the performers' understanding of balance, dynamics, climaxes and articulations may contribute to a convincing performance. Its aim is to provide trombonists preparing the work for performance with an analytical foundation that includes specific recommendations for solving performance problems, questions, and challenges.

The first section of the paper comprises a detailed discussion of the presentation, return, modification, and derivation of the melodic themes that define the formal structure of the work, which is also graphically presented in the appendix. Extensive comparisons of specific pitch-class sets show how they unify the work, and Schenker-style graphs illustrate the relative importance of principal pitch centers. The second section of the paper relates harmonic action in the sonata to more traditional harmony and shows how this provides a strong foundation for Hindemith's harmonic language. Both traditional and non-traditional methods of providing centricity, motion, and unity in the sonata are illustrated through the use of music examples. The use of pitch-class sets as harmonic material is also discussed. The final section of the paper outlines performance issues that have been raised through analysis, practice, and performance of the work. Specific examples are provided which address performance problems and solutions.



## CHAPTER 1: INTRODUCTION

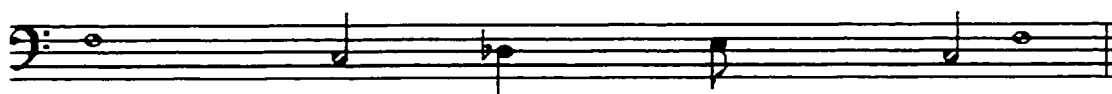
Paul Hindemith's *Sonata* for trombone (1941) is performed frequently on recitals and recordings and has become an important composition in the solo trombone repertory. Because of its stature as a cornerstone of twentieth-century solo trombone literature, it is deserving of thorough analysis of its formal plan and harmonic structure.<sup>1</sup> This paper, and its accompanying lecture-recital, will focus on these aspects of the sonata, and upon how their influence on the performers' understanding of balance, dynamics, climaxes and articulations may contribute to a convincing performance. Its aim is to provide trombonists preparing the work for performance with an analytical foundation that includes specific recommendations for solving performance problems, questions, and challenges.

Musical examples are plentiful throughout the text. Because it is impossible to provide examples of every point, however, it is important to have on hand a piano score, with the measures numbered in each movement. A recording of the work is also important, as it provides aural illustration of the examples in the text. The text assumes a knowledge of standard analytical tools including basic functional harmony and the ability to read music examples and a form chart. It also includes basic Schenker-style reductive graphs which indicate relative strengths of pitch

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<sup>1</sup> Analyses of this sonata have appeared in John Robert Drew, "Classic Elements in Selected Sonatas for Trombone and Piano by Twentieth-Century American Composers" (D.M.A. diss., University of Kentucky, 1978), Dorothy Payne, "The Accompanied Wind Sonatas of Hindemith: Studies in Tonal Counterpoint" (Ph.D. diss., Eastman School of Music, University of Rochester, 1974) and Chang-Yi Lai, "An Analytical Study of Nine Selected Sonatas for Trombone and Piano" (M.M.Ed. diss., Lamar University - Beaumont, 1994)

centers by a hierarchical system of note values; the longer the note value, the stronger and more important the center. As an example of this technique, a reductive graph of the first movement, gleaned from the appendix, is provided in example 1.1. The F is shown as a whole-note to indicate its primary importance, whereas the C is a half-note because of its secondary role. The shorter note values of D-flat and E also illustrate their relative importance.

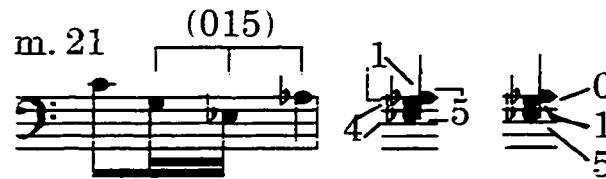


Example 1.1

Pitch-class set notation is used throughout the text. A complete discussion of this analytical technique, however, is too extensive to include in this introduction. A brief example may serve to illuminate its use throughout this paper to a reader who is unfamiliar with the technique, but a thorough understanding is preferable.<sup>2</sup> The three pitches A-flat, G, and E-flat, as illustrated in example 1.2 from theme B (m. 21) of the second movement, comprise an (015) set. When collapsed so as to fit within an octave and arranged so the interval between the outer notes is as small as possible, this set can be shown to contain the intervals of one half-step (from A-flat to G), five half-steps (from A-flat to E-flat), and four half-steps (from G to E-flat). The label (015) is derived by starting a half-step count at 0 from the end of the set which is most densely packed, at either the top or the bottom

<sup>2</sup> For a comprehensive introduction to these concepts please see Joseph N. Straus, *An Introduction to Post Tonal Theory* (Englewood Cliffs, NJ: Prentice Hall, 1990), 26-43.

(in this case from the top). The actual technique requires examination of the inversions of the set, but for the purposes of this paper, and because of the limited sets being explored, this step will not be discussed here.



Example 1.2

Chapter 2 comprises a discussion of the form of the entire work. It focuses on the statement, recurrence and modification of thematic and motivic material as well as relationships of the form of the sonata to familiar forms. The main points in the chapter are that the first and last movements comprise a single interrupted sonata form and that the themes of the work are linked by a group of specific pitch-class sets--showing their common origin to be the sonata's first theme.

Chapter 3 discusses the harmonic aspects of Hindemith's style in the sonata. It relates harmonic action in the sonata to more familiar functional harmony and shows how this provides a strong foundation. Both traditional and non-traditional methods of providing centricity, motion, and unity in the sonata are discussed through the use of music examples. The use of the previously mentioned pitch-class sets as harmonic material is also discussed.

Chapter 4 concludes the text by discussing performance issues that have been raised through analysis, practice, and performance of the work. Specific examples are provided which address performance problems and solutions.

The analysis and observations provided are intended to enhance the basic understanding of the organization of the sonata, elevate the awareness of specific performance issues, suggest solutions to questions of interpretation, and enable performers to give a more effective performance. Through this paper, the author also hopes to encourage analyses of other contemporary works for trombone.

## CHAPTER 2: FORM

The form of this sonata is an excellent example of Hindemith's methodology: it maintains strong links to tradition with enough exceptions and modifications to provide originality and uniqueness. Its individual movements resemble familiar forms and its overall form is created by clear restatements of thematic material. The thematic and rhythmic returns in each of the first three movements generate distinct forms, but the final cadence of each is weakened functionally and thus lacks the closure that a fully independent movement would possess. There is an indication that Hindemith originally planned the work in three movements and then added the fourth, which restates and reworks themes from the first movement, possibly to bring thematic closure to reinforce the finality of the tonal relationships.<sup>1</sup> In addition to strict thematic returns, the derivation of all of the themes from carefully chosen intervallic sets helps to bind the work and unify its formal structure. The formal outline in the appendix, which shows the large-scale tonal centers, thematic areas, and formal divisions of the entire work, will provide a foundation for the following discussion of the detailed formal aspects of the work.

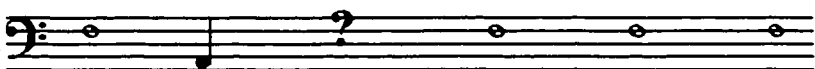
The opening movement of the work, as the formal outline shows, is the first half of a complete sonata form that is interrupted mid-development; the fourth movement provides its conclusion. The form, therefore, has only two main sections, an exposition and a development, with the return of the first theme in m. 72 acting as a false reprise, and contributing to the development rather than providing a recapitulation.

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<sup>1</sup> David Neumeier, The Music of Paul Hindemith (New Haven, CT: Yale University Press, 1986), 213.

The movement begins with a bold first theme in the trombone over a persistent dotted rhythm in the piano. Throughout the first theme area, mm. 1-18, the three-measure theme is passed back and forth between the trombone and the piano as shown in table 2.1.

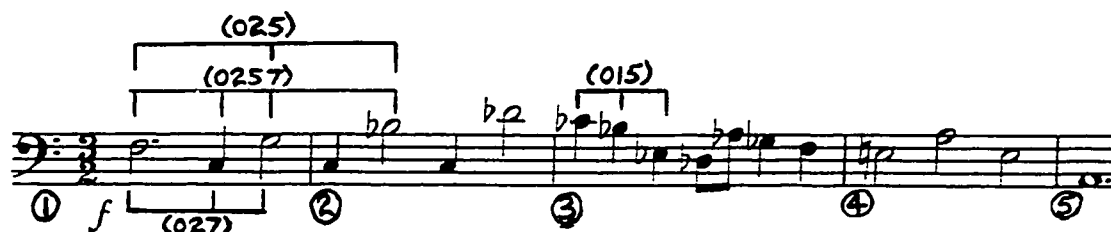
Table 2.1

<u>measure no.</u>	1	4	7	10	13	15
<u>instrument</u>	trombone	piano	trombone	piano	trombone	piano
<u>tonal center</u>						

Each time the theme is presented in the tonic, the entrance is strengthened and highlighted by the accompaniment. In contrast to the smooth, almost elided approaches to the non-tonic entrances of the theme in mm. 4 and 7, the approach to the theme in F at m. 10 is strengthened by the piano trill in m. 9 and the tonic support in m. 10 that is similar to the opening of the piece. Measure 13 is also strengthened, this time by a crescendo in the accompaniment to the fortissimo entrance (the loudest in the first theme area). The last entrance on F, m. 15 in the piano, is less pronounced because it enters after only two measures of the previous theme, is not provided a tonic bass support, and is embedded in the heavy texture of the dotted rhythms.

Though F is established as a central note at the beginning of the piece, it is more by sheer weight than by a melody that is easily recognized to be in F. Indeed, the first theme in the trombone begins on F, comes to a

cadence on A at m. 5, but in the process uses 11 of the 12 pitch classes. Specific interval sets are identifiable in the theme, however, and prove to be an important unifying feature of the work. The first theme introduces the interval sets that are used throughout the entire composition. Example 2.1 shows how the first theme defines the four main sets that unify the work. The primary set is the symmetric (0257), but its subsets, (025) and (027), and an additional set, (015), also play important roles in the piece.



Example 2.1

These sets are featured prominently in melodies and harmonies throughout the work.

The transition between the first theme area and the second theme area is a good example of the use of the sets in a transitional role. As the first theme area builds to a strong close at m. 17, five octaves of B serve as leading tones to the dominant key area, in which the second theme is presented in m. 19. To complete the modulation, the transitional passage in the piano at mm. 18-19 uses three iterations of the trichord (015), articulating a sequence of falling fourths (0257), as seen in example 2.2.

Example 2.2 shows measures 17, 18, and 19. Measure 17 is marked with a circled 17. Measure 18 is marked with a circled 18 and contains a (015) set label. Measure 19 is marked with a circled 19 and contains a (015) set label. A (0257) set label is placed above measure 18. The piano part features a decrescendo and a reduction in density, with a *mf* dynamic marking in measure 19.

Example 2.2

The piano's decrescendo and a reduction of the density in this transitional passage signals a change in style to a lighter second theme. Example 2.3 shows how this theme also features the sets of the first theme. It is important to note that the initial (0257) set of this theme (F, G, B-flat, C) is identical, with respect to both set class and pitch-class content, to the initial set of the first theme.

Example 2.3 shows measures 19 through 23. Measures 19, 20, and 21 are marked with circled numbers 19, 20, and 21 respectively. Measure 19 is marked with a circled 19 and a *mf* dynamic marking. Measure 20 is marked with a circled 20. Measure 21 is marked with a circled 21. Measure 22 is marked with a circled 22. Measure 23 is marked with a circled 23. Set labels (0257), (025), (025), and (015) are placed above measures 19, 20, 21, and 22 respectively. A (015) set label is also placed below measure 23. The piano part features a decrescendo and a reduction in density, with a *mf* dynamic marking in measure 19.

Example 2.3



This straightforward accompanied melody, first played by the trombone at m. 20, then by the piano at m. 24, provides an effective contrast to the weight of the first theme.

The brief linking passage that follows, mm. 27-29, is comprised of the first motive of the theme repeated three times in the trombone--the first two iterations are (015) sets and the third a (025). It leads to a modified second theme, centered on B, in the piano in m. 30-33. This transposed theme is repeated, two octaves lower, in m. 34-37. A short passage of three iterations of the second theme's head motive drives to the closing theme in m. 40. Like the others, this theme in D-flat is also comprised of the intervallic material from the original sets. In addition, it is a transposed derivation, as shown in example 2.4, of the upper line of the first theme.

Example 2.4

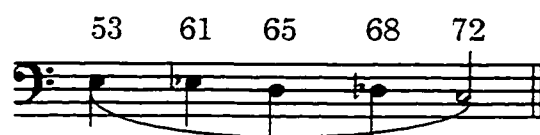
Two three-measure iterations of this theme (mm. 40-42, and mm. 43-45) lead to a falling-fifth sequence in the trombone and piano in mm. 46-48: the four notes in each part restate the (0257) set, as shown in example 2.5.



Example 2.5

Additionally, the (0257) in the trombone leads to the goal of D-flat in m. 48. The piano progresses, through two (027) fragments (shown in example 2.5), and comes to a strong cadence on D-flat in m. 48, affirming the importance of this, the final cadence of the exposition.

A linking passage, in which the piano plays fragments of a similar falling-fifth sequence, begins the development in m. 50. Similar to traditional sonata form movements, a number of different keys are explored as the motivic development takes place. The bass-line sketch in example 2.6 shows that the local tonal centers project a descending chromatic line that reaches C when the principal theme returns in m. 72.



Example 2.6

Each of these centers supports a different developmental treatment of one of the two themes. The E in m. 53 supports the head motive of the second theme as it is set against a line in the trombone built from the interval sets of the first theme (see example 2.7).

Example 2.7

In mm. 57-60 this setting is inverted, modified, and transposed to G, with the trombone taking the second theme fragment and the piano playing the newly composed line. As E-flat becomes the tone center in m. 61, a stretto of the head motive of the second theme occurs between the parts. The trombone's motive is based on E-flat and the piano's is based on B-flat. Three iterations of this stretto drive to the closing theme, centered on D, in m. 65. The closing theme itself is not greatly modified, but its

accompaniment is light compared to its exposition in m. 40. The intensity of the dotted rhythms returns as the center shifts to D-flat for another setting of the closing theme in mm. 68-71. This setting involves transpositions of the theme fragments to different levels. The rising transpositions, along with the rhythmic intensity of the dotted rhythms and a crescendo, help to build to the development of the first theme in C at m. 72. The first theme is recalled intact for two measures and then is modified with an extension that makes it four measures, in contrast to the three-measure form in which it was presented in the exposition. This four-measure version of the theme is repeated three times, first in the trombone, then in the piano, and finally in the trombone to end the movement. The final statement is a modified version in which the trombone sustains the A-flat for the last two measures, rising to A on the last note of the movement. This A is supported in the deep bass by an F which gives a limited sense of closure as a return to the original tonic. This closure, however, is definitely not final, as will be discussed in chapter 4. The A in the trombone foreshadows the first note of the second movement, providing a connection between the movements.

As shown in the formal outline of the appendix, the second movement is a double-variation form that centers around A and D. It is at the same time a continuous form and a two-part form. Continuity is provided by theme B, an unvaried trombone melody repeated four times with varied accompaniment. Also, theme A and its variations (A1, A2, A3) are ultimately linked by the presence of unvaried parts of the theme in each of the variations. The two-part nature of the form is created by a parallel correspondence within each half of the movement. The fourteen measure

statements of theme A and var. A1 are very similar; variation A1 is a restatement of theme A with the addition of consistent sixteenth-note rhythm. Variation A2 and A3 are eighteen measures in length and have a similar correlation; var. A3 is a restatement of var. A2 with the addition of thirty-second-note rhythms.

The movement opens with a simple, yet intriguing, four measure introduction of the tone centers that govern the movement. When theme A begins in m. 5, it is clear that the same sets that were involved in the first movement themes are used in this theme also. Example 2.8 shows (0257) and (027) collections used in the beginning of theme A in mm. 5-6.



Example 2.8

Variation A1, as stated earlier, has a very close relationship to theme A. A measure-by-measure comparison of the fourteen-measure melodies reveals that most notes of theme A are represented in var. A1 and the rhythms are only slightly varied. Excepting changes of register, the melody in mm. 29-36 is an exact copy of that in mm. 8-15. Because of the

accompaniment and the texture, however, it can be difficult to hear the connection between mm. 37-39 and mm. 16-18. Example 2.9 shows how closely var. A1 follows theme A at this point.

Example 2.9

Variation A2, unlike var. A1, reflects greater modification from the original theme. This variation is extended to eighteen measures by an expansion of five measures, mm. 50-54, and a reduction of one measure between mm. 60 and 62. In mm. 55-59 it features a one-beat canonic treatment, at the interval of a perfect fourth, of transposed versions of the motive from m. 8 of the original statement. The opening of var. A2, mm. 47-54, is unlike the beginning of the original theme, but the ending, mm. 62-64, uses the same melody as mm. 16-19 a perfect fourth higher. Variation

A3 uses the same ending passage, but does not include the canonic treatment of the other motive. Instead, it simply restates the motive from mm. 8-11 of the original theme at mm. 80-83. Its similarity to var. A2 is striking: although it has different accompaniment, the melody restates almost exactly the eighteen measure melody of var. A2.

Theme B and its variations (B1, B2, B3) are always stated by the trombone. The melody itself is unvaried, with the variation occurring in the accompaniment. Because of the predictable phrase rhythm of the variations of theme B (always comprising eight measures), they act as familiar landmarks between the more complex variations of theme A. Once again, as shown in example 2.10, the beginning of theme B is also related to the sets of the first movement's first theme.



Example 2.10

The theme ends on D at the beginning of var. A1, in m. 26, with its cadence weakened by the continuous motion of the piano. This linkage technique is employed at the cadences at the end of each section of the movement, providing impetus for the continued variation and an overall continuity. The accompaniment to the trombone theme also provides continuity as it moves in a scalar fashion from the cadence of the previous section. Table 2.2 shows how this occurs in each statement of the theme.

Table 2.2

<u>measure no.</u>	19-26	40-47	65-72	90-97
<u>section name</u>	theme 2	var. 1	var. 2	var. 3
<u>accomp.</u>	ascending	descending	descending	descending
<u>motion</u>	chromatic	chromatic	diatonic	whole-tone <sup>2</sup>

The scalar motion adds to the ambiguity of the tonal center and makes it difficult to discern until the cadence. Even at cadence points, the immediate motion quickly blurs the tonal center. The final cadence of the movement is stronger because it lacks the motion that the earlier cadences had. With both parts settling on a D, the sense of repose is more evident.

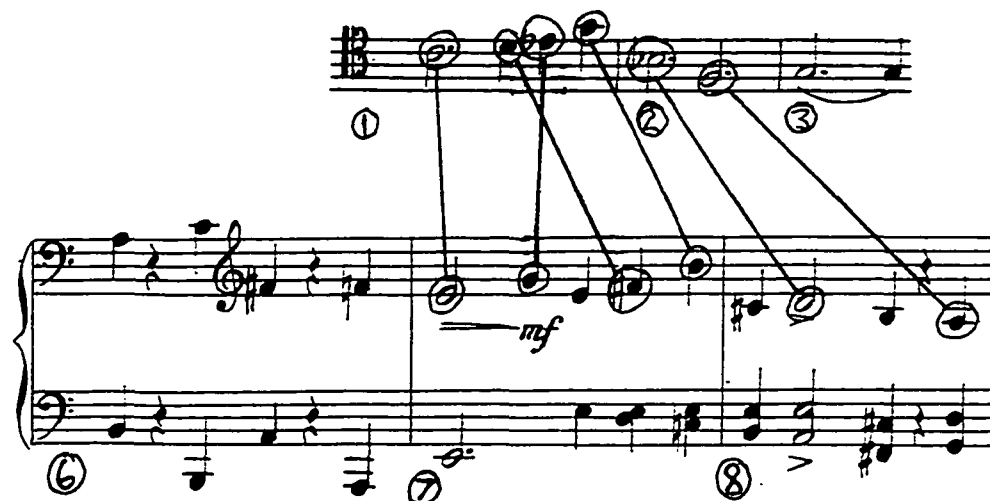
The spirited third movement is organized in a binary form: the second half is a varied repetition of the first. The only changes made in the repetition occur in the accompaniments of the A section. The themes come back as they were originally stated and in the same metric placement. As shown in example 2.11, the movement begins with a first theme centered on C, but projects the identical (F, G, B-flat, C) set as the principal theme of the first movement. Not only is the (0257) set used, but also the (015).

Example 2.11

<sup>2</sup> The last interval is a minor second, but the overall motion is that of the whole tone scale.



The right hand piano ostinato that begins at m. 7, shown in example 2.12, is based on the first theme transposed to E and is therefore a continuation of the first theme area.



Example 2.12

The second theme, which enters in m. 15, also includes (0257), (027), and (015) sets as shown in example 2.13.



Example 2.13

This theme is presented in the trombone, m. 16-19, over E-flat harmony, and then in the piano, m. 20-23, over voice-leading that moves to an F cadence at m. 23. A third statement of the theme in the trombone starting at m. 24 serves as a transitional passage that leads into the B section. A brief rhythmic ostinato in the piano sets the character and the third theme enters, centered on C in m. 34. The opening of this theme, like all of the others, uses the (0257) set. As shown in example 2.14, the theme also begins with the same pitch classes (F, G, B-flat, C) as were used in the first movement's principal theme.

Example 2.14

After the trombone reaches F, in m. 44, a brief closing passage in m. 47-50 concludes the first half of the movement and confirms F as the center with the cadence in m. 50. A short modulatory link in mm. 50 and 51 restores C as the center for the return of the first theme. Although the harmony at the beginning of the first theme (downbeat of m. 52), and the end (downbeat of m. 58) are the same as they were in the initial presentation, the chromatic sequential motion between them obscures the center somewhat. At m. 58, a return of the piano ostinato, this time in the right hand, accompanies a

sequential move to a strong cadence on E in m. 66. The second theme then enters in the trombone accompanied by a directed bass-line that drives to the cadence on F in m. 70. In the first half of the movement, mm. 16-20 were based on a center of E-flat. The removal of that center, in mm. 67-70, gives F more strength in this half of the movement. The subsequent restatement of the second theme in the piano is also accompanied by a bass-line directed towards F, ending in a cadence at m. 74. The transitional modification of the second theme leads into an exact repetition of the B section from mm. 83-100. F-C fifths are added to strengthen the cadence at m. 101. A pedal F is articulated in the piano in m. 101 and is held over as the fourth movement begins *attacca*.

The F is the same note, in the same register, that was articulated at the end of the first movement. This pitch connection, along with the return of modified themes, is a significant indicator that this movement continues the development from the first movement. It starts with a B-flat statement of the second theme, so the F underneath is heard as a dominant pedal. As shown in example 2.15, the head motive of the first movement's second theme is rhythmically altered by augmentation of its second, third and final notes.

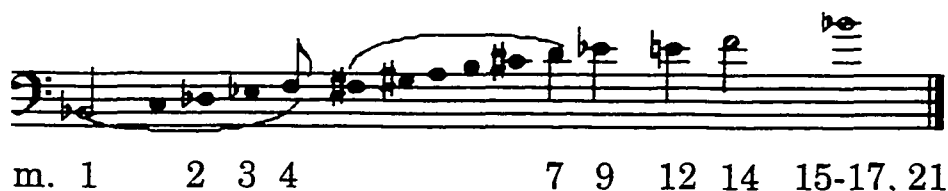
Fourth movement

First movement

(19) (20) (0257)

Example 2.15

These rhythmic alterations give the once energetic motive the *maestoso* quality that Hindemith calls for at the beginning of the movement as well as accentuating the contrast between it and the third movement. As a way of providing melodic motion, the second and third pitches of the motive are changed in mm. 3 and 5. Rather than repeat the second note as in the original, the leap of a third in m. 3 and the step up in m. 5 participate in the rising motion that has E-flat as its goal in m. 9. At m. 6 the rising motion becomes chromatic with the C-sharp leading to a two-measure statement of the eighth-note figures centered on D. The fragments become longer and more substantial, which leads the ear to hear them as local centers. Example 2.16 illustrates how the weight of the local centers in this part of the development become stronger as they progress upwards, linked by rising scalar motions. The note values show their relative strengths.



Example 2.16

At m. 9 the initial motive of the theme, centered on E-flat, is stated twice in its augmented form over a harmonization of the fragmented eighth-note figures. As a continuation of the rising chromatic line, the piano in mm. 12-13 states the motive centered on E. The trombone continues the chromatically rising imitative motion with yet another, though shortened, transposition of the motive to F in mm. 14-15. A complete augmented version of the second theme, centered on B-flat, is then stated in mm. 15-18

with a newly composed melodic ending, mm. 19-20. The strength of B-flat at the beginning of this movement is established by an opening statement on B-flat, reiteration of B-flat in the bass (mm. 9, 10, 11, 12, 17, and 21), and two statements centered on B-flat (mm. 15-18 in the piano, and mm. 21-25 in the trombone). The beginning of the statement in the trombone is supported by a pillar of B-flat/F fifths. The end of the statement includes one of the bars of melodic material that was added in mm. 19-20. Measures 26-28 feature the contrary motion of ascending eighth-note fragments from the second theme against a descending bass line, each proceeding to the common goal of E-flat in m. 28. This relatively strong arrival supports the opening of the only second theme statements in this movement that are in the original form, without rhythmic augmentation. The statement of the second theme in the trombone in mm. 28-31 is centered on E-flat, as is the following statement in mm. 32-34. The latter, however, as shown in example 2.17, also participates in an imitative stretto of the second motive of the theme that ascends chromatically to a strong cadence on F-sharp in m. 35.



Example 2.17

Rising out of this cadence is the transposed, but otherwise unchanged, closing theme from mm. 40-42 of the first movement. It is first stated on F-sharp in mm. 35-37, then a fourth higher on B in mm. 38-40, and is accompanied both times by the eighth-note figure from the second theme. These closing motives drive to a powerful return of the first theme in m. 41. This recapitulation is literal until m. 51, where the theme is modified and extended with a quarter-note triplet figure. The newly modified theme is passed smoothly from the piano to the trombone in m. 54, and back to the piano in m. 58, each time presented in F. The piano's statement of the theme, however, is interrupted by another in the trombone at m. 60, which is ambiguous as to tonal center partly due to the absence of its first note. This statement is incomplete, as well, and is followed by a brief fragment of second theme musings, as shown in example 2.18, a comparison of mm. 62-63 with mm. 26-27 from the development of the second theme.

The image displays a musical score comparison. The top system contains measures 62 and 63, marked with a piano (p) dynamic. The bottom system contains measures 26 and 27, with dynamics of mezzo-forte (mf) and forte (f). Circled notes in measures 62 and 63 are connected by lines to corresponding circled notes in measures 26 and 27, highlighting the thematic comparison between the two passages.

Example 2.18

This short interjection is the only passage in the principal theme areas of the first and last movements that does not include the persistent dotted rhythm in the accompaniment. The absence of this rhythm prepares the final return of the first theme material, just as the clearing of a register prior to an entrance in many fugues helps emphasize the entrance. The dotted rhythm's return, along with the entrance of the theme in the trombone and the imitative leaps in the piano generate a very strong arrival at m. 64. The coda provides a dynamic and emphatic ending for the work. It recalls the energy of the closing of the first movement, with planing chords in the piano underneath a sustained note in the trombone. It delivers a finality, however, with its strong consonant ending, that the ambiguous cadences of the previous movements could not provide. As mentioned previously, the fourth movement's recall of the themes of the first movement, particularly the literal recapitulation, complete the sonata form begun in the first movement.

## CHAPTER 3: HARMONY

Relatively few examples of traditional cadences and harmonic progressions are evident in Hindemith's harmonic style. This requires performers to find ways of identifying centricities and the motions between them. Attention to the obvious cadences will reveal a background harmony that progresses in a more traditional sense than the harmonies of the foreground--the chromatic melodies, accompaniments and counterpoint that occur between these cadences. This background-sensitive approach will help performers emphasize goals that strengthen functional relationships and clarify the underlying harmonic structure. The structure of this work is driven by the use of strong harmonic goal points, a variety of identifiable techniques that strengthen goals and progress from goal to goal, and harmonic unification provided by recurring pitch-class sets.

The overall tonality of the sonata is supported by a network of goals which Hindemith called "harmonic pillars," while the highly chromatic foreground of the music is difficult to describe with traditional harmonic vocabulary. A statement Hindemith made in The Craft of Musical Composition, part III shows how he regarded harmony and harmonic progression from a compositional standpoint:

If the tonality is well thought through and clearly presented by means of several harmonic pillars placed in wisely calculated positions, then the harmonic construction in-between can be somewhat looser, the tonality worked out in weak, even the weakest, form.<sup>1</sup>

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<sup>1</sup> Paul Hindemith, Übungsbuch für den dreistimmigen Satz ed. Andres Briner, P. Daniel Meier, and Alfred Rubeli (Mainz: Schott, 1970), 203; quoted in David Neumeyer, The Music of Paul Hindemith (New Haven, CT: Yale University Press, 1986), 42.



His “pillars” are consonant chords and progressions, reminiscent of traditional harmony, that are placed at structurally important points in the piece to provide a basis for the rest of the music. Example 3.1 shows a strong structural pillar at m. 70 in the third movement. It is the goal point of a directed bass-line that ends in a V9-I cadence on F. The descending bass-line in the next four bars is also directed towards F, although without the traditional cadence to strengthen the approach.

Example 3.1 is a musical score excerpt from a third movement, focusing on measures 67 through 74. The music is written for piano in F major, 4/4 time. Measures 67-69 show a descending bass line. Measure 70 is a V9-I cadence on F. Measures 71-74 show a descending bass line. The score includes dynamic markings (f, cresc., decresc.) and articulation (accents).

Example 3.1

Another pillar is the strong V-I progression towards E leading to measure 15 of the same movement, as shown in example 3.2, which reinforces the sense of centricity established in measure 7. It is particularly strong

because it is widely voiced with 5 octaves of E and is approached in contrary motion by chromatic lines in the soprano and bass.

E: I V I

Example 3.2

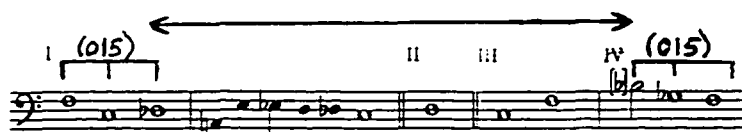
Hindemith also uses extended progressions that are related to a single key, although they are less common. For example the progression I-IV-V/V-V-I in m. 16-20 of the third movement, as shown in example 3.3, supports a tonal center of E-flat begun in m. 16.

$E\flat$ : I IV  $V/V$  I

Example 3.3

These harmonic pillars are a fundamental aspect of the work. All of the movements employ them as a structural foundation, and the themes are supported by areas of pitch centricity that are defined by the harmonic pillars.

In addition to these pillars, the ways in which Hindemith establishes tonal centers by harmonic and melodic means, and the ways in which he diminishes the strength of a center in order to modulate to a new one are also important. Hindemith, according to David Neumeyer, provided a notation in his sketchbook, shown in example 3.4, which outlined the important pitch centers of the trombone sonata.



Example 3.4

Although the sketch clearly represents prominent key centers in the piece, a more fundamental description of the harmonic structure can be derived by stripping away the some of the detail. Example 3.5, a sketch of the important centricities in the work, provides a clear depiction of how the underlying structure reinforces relationships that are common in tonal music.



Example 3.5

The appearance of F as a tonic with C as its dominant shows that as Hindemith worked towards the limits of chromatic tonality, he utilized the capacity for functional relationships to provide motion and coherence. The D of the second movement, as the lower third to F, and the B-flat in the beginning of the fourth movement, a fifth relation to F, also fit into the tonal scheme as closely related pitches. Hindemith's added detail in the earlier example shows how the strong tonic-dominant relations in the background are complemented by secondary centers that are somewhat further removed from F. In Hindemith's sketch, the tonal centers of the first and last movements each comprise the set (015), one of the important sets of the first theme. This relationship of the "background melody," as Hindemith called it in *A Composer's World*, to the thematic ideas provides even more evidence of a consistent use of particular sets as well as a continuous formal structure.<sup>2</sup>

These deep "background melodies" provide the support for very complex surface motions that are nearly continuous in their progression from one perceived center to another. This modulatory motion is often accomplished by methods that have close similarities to those used in tonal music. As discussed in chapter 2, a sequence of falling fourths in m. 18-20 is used to change the centricity from F in the first theme to C in the second. Falling-fifth sequences in mm. 46-52 prepare a strong cadence at the end of the exposition and serve as a link to the development. This method of modulating is used regularly in tonal music, and it is hardly surprising that Hindemith chose to use it as well. Additional examples of sequences

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<sup>2</sup> Paul Hindemith, *A Composer's World: Horizons and Limitations* (Cambridge: Harvard University Press, 1952), 93.

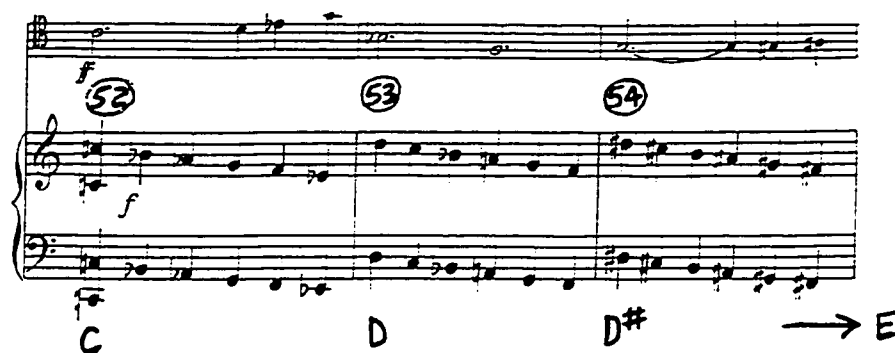
will illustrate some of the different ways in which Hindemith utilizes this particular technique to generate connective material.

In the second movement, a descending chromatic sequence, as shown in example 3.6, accompanies the trombone in m. 40-44 and contributes to the change of center from A in m. 40 to D in m. 47.



Example 3.6

The third movement also contains considerable sequential motion. Example 3.7 shows the beginning of an extended sequential passage that accompanies the first theme when it returns in m. 52 and drives to the cadence on E in m. 66. This portion of the sequence comprises a one-bar model that is presented in rising major and minor seconds.



Example 3.7

An ascending mini-sequence in the trombone, with its two quarter-note model creating a cross-rhythm in m. 55, delays the progression of the primary sequence and intensifies the arrival of E, its next iteration, as shown in example 3.8. The sequence is ingeniously passed to the trombone melody in m. 57 and back to the piano in m. 58; remarkable because the trombone melody here (theme 1) is unchanged from the first half of the movement. The sequential ascent is briefly interrupted by a descent to A-sharp, but then gains momentum by speeding up with a one-beat model driving to the goal of E in m. 63.

The musical score for Example 3.8 consists of two systems of staves. The first system contains measures 55 through 58. The piano accompaniment (left staff) features a sequence of chords labeled E, F, and G. The trombone melody (right staff) is shown with notes corresponding to these chords. The second system contains measures 59 through 63. The piano accompaniment (left staff) features a sequence of chords labeled A, B, A#, B, C, D, and E. The trombone melody (right staff) is shown with notes corresponding to these chords. The score includes dynamic markings such as 'mf' and 'cresc.'.

Example 3.8

In addition to sequence, Hindemith also uses pure scalar motions to move from one center to another. For example, the move between the two

principal keys of the second movement is often accomplished by a scale, as previously illustrated in table 2.2. Example 3.9 shows how parallel chromatic ascents accomplish the move from a center of A in m. 19 to D in m. 26 as they accompany the trombone melody.



Example 3.9

Though rare, diatonic motions are also used, as example 3.10 illustrates. An A-flat diatonic collection descends between the D in m. 65 and the A of m. 70 as an unrelated scale providing motion between two related pitch classes.



Example 3.10

Hindemith also uses the whole-tone scale. The passage that accompanies the trombone in m. 91-95 of the second movement, example 3.11, shows the scale in use as the top line of the accompaniment moves from A in m. 91 to D in m. 95. (As mentioned previously, the last step is a half-step, but the principal motion is that of the whole-tone scale.) This passage is also important because the (0257) set from the sonata's first theme is used in each chord of the accompaniment.

The musical score for Example 3.11 consists of three staves. The top staff is a single melodic line. The bottom two staves are a piano accompaniment. Measures 91-95 show a sequence of chords, each labeled with the set (0257) and a dynamic marking (p or m2). Measure 96 shows a final chord with the set (0257). The chords are: (0257) p, (0257) m2, (0257) m2, (0257) m2, (0257) m2, and (0257). The chords are connected by a slur, indicating a continuous harmonic progression.

Example 3.11

Scales in opposing directions are also used, as example 3.12 from the second movement shows. The hands sequentially wedge outwards from the departure point of D in m. 33 to the common goal of A in m. 36. Noteworthy is the whole-tone motion in the soprano against the chromatic descent of the bass.





Example 3.12

The second movement is not alone in its usage of these scalar methods of modulation. Each of the movements relies on the technique at some point. An excellent example from the third movement occurs in m. 42-46.

Example 3.13 shows the combination of ascending and descending chromatic lines that wedge outwards to goals of B and D-sharp respectively.



Example 3.13

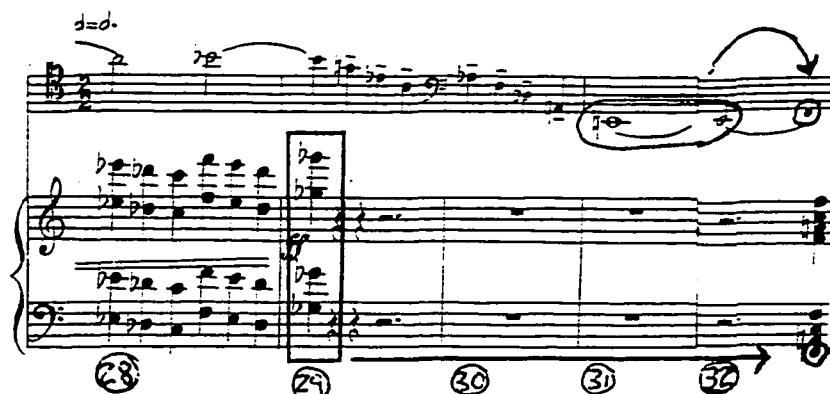
As a natural product of scalar motion, Hindemith also relies heavily on the power of leading-tones, both lower and upper, to help establish centricity.

One of the most powerful examples, the five octaves of B that lead to the C of the second theme in the first movement (m. 17) was discussed in chapter 2.

Another good example is the beginning of var. A2 in the second movement. Example 3.14, m. 47-55, shows the leading tone A-flat as it is reiterated to strengthen A upon its arrival in m. 54. In addition to the leading-tone itself, a half-diminished chord is arpeggiated in the melody line in m. 49, increasing the sense of anticipation.

Example 3.14

Example 3.15 from the third movement, mm. 28-32 provides a view of the somewhat less frequent upper leading-tone in combination with a lower leading-tone. In this excerpt, both the G-flat in m. 28 and the E in m. 30 pull toward the F that arrives in m. 31.



Example 3.15

Many other examples of leading tone activity occur throughout the piece.

Various rhythmic devices also allow Hindemith to provide or deny strength to a tone center. As in most tonal music, cadences can be strengthened by extending the duration of the resolution note or by providing rests immediately following. Example 3.16 shows how Hindemith strengthens the cadence on E in the following example from the third movement, m. 14-15, by following it with a rest.



Example 3.16

An example of strengthening a cadence by prolonging the resolution note is shown in example 3.17 from the end of the third movement. The cadence in m. 101 sounds much more final because of the extended F than does its counterpart in m. 50, which moves quickly away from the F.



Example 3.17

As cadential goals in tonal music are strengthened when supported by chord roots, cadences and central pitches in this genre of music also become stronger with stable, consonant support. Actually, because of the amount of instability on the surface of this music, this consonant support can provide comparatively more strength because of the infrequency of its application. A perfect example of this is the recapitulation of the fourth movement, shown in example 3.18, where the familiar first theme returns

over tonic support in an extremely strong cadence at one of the harmonic pillars of this movement.



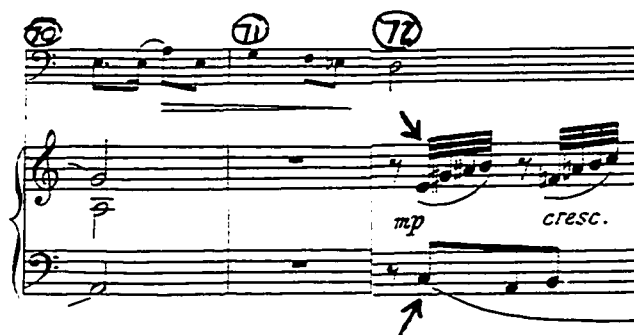
Example 3.18

Example 3.18 illustrates the stability that an octave between the bass and the melody can provide. Consonant support of a fifth between the bass and melody also provides stability, though weaker than that of an octave. This can be likened to the use of an inverted chord rather than one in root position. Example 3.19 from the exposition of the first movement, mm. 15-16, shows how a piano entrance of the first theme on F is supported by B-flat rather than the F that supported the initial entrance.



Example 3.19

Because surface centricities in this work are transient in nature, examples of motions and techniques that weaken them are less important than those that strengthen. There is one example, however, in which cadences on fundamental pitches of a movement are repeatedly elided by the immediate introduction of a new idea. Example 3.20 shows one of the many examples of this technique from the second movement, m. 70-72. The piano moves immediately upon the trombone's cadence on D in m. 72 and contributes to the continuity of the movement which has fewer strong cadences than the other movements.



Example 3.20

As was mentioned in the opening of this chapter and throughout the examples, the sets presented in the first theme of the sonata, (0257), (027), (025), and (015) play a vital role in the harmonic activity of this work. Example 3.21, measures 43-45 from the closing theme of the first movement, shows how pervasive the (0257) and its subsets are.



Example 3.21

The (015) set is less prevalent overall and is mostly used in more active passages such as counterpoint or melodic activity, possibly because of its inherent ability to provide motion through the attraction of the half-step. Examples of its use include the earlier cited transition from the first theme area to the second theme area of the first movement, mm. 18-19, and example 3.22, also from the first movement, mm. 31-32.



Example 3.22

Its ability to provide motion is shown in example 3.23. Sequenced (015) sets in mm. 28-29 of the first movement lead to a more final (025) at the top of the imitative passage at m. 30. Other set activity in this passage includes the arpeggiated (0257) sets that accompany this sequence, and an (0257) that takes part in the cadence in m. 27.

Example 3.23 shows a musical score for measures 26-29. The score is in 5/4 time. Measure 26 has a circled (015) set. Measure 27 has a circled (015) set and an arpeggiated (0257) set. Measure 28 has a circled (015) set and an arpeggiated (0257) set. Measure 29 has a circled (025) set and an arpeggiated (0257) set. The score includes piano (p) and mezzo-piano (mp) markings.

Example 3.23

Other significant examples bear discussion because of their individual traits. Both harmonic and melodic functions are served by the same (0257) set, as illustrated in example 3.24, m. 61 of the first movement.

Example 3.24 shows a musical score for measures 60-61. The score is in 5/4 time. Measure 60 has a circled (0257) set. Measure 61 has a circled (0257) set. The score includes forte (f) markings.

Example 3.24



A repetitive (0257) figure, shown in example 3.25, occurs at the end of the first movement, m. 81-83. The right-hand of the piano begins planing augmented chords whose members follow an (0257) pattern after the trombone has arrived on the A-flat. For clarity only one set has been marked, but three parallel sets occur throughout.

Example 3.25

Again, in the fourth movement, m. 70-73, the final sequence of the piano's planing chords is organized by the use of the sets from the first theme. This time (0257) sets interlocked with (027) sets are circulated after the trombone attacks the F, as shown in example 3.26.

The musical score consists of three systems of piano accompaniment. The first system, measures 69-70, shows a treble staff with a melodic line and a bass staff with a dense chordal texture. The second system, measures 71-72, continues the texture with various intervallic markings like (027) and (0257). The third system, measures 73-75, shows a transition with more complex intervallic structures. The score is written in a key with one flat and a 3/4 time signature.

Example 3.26

An (0257) set with one additional member, another fifth relation, creates the pentatonic superset (02579) in the distinctive piano accompaniment, m. 38 of the first movement, as shown in example 3.27.

Example 3.27 shows a musical score with two staves. The top staff is in bass clef and the bottom staff is in treble clef. Measure 37 is marked *mf* and measure 38 is marked *mf cresc.*. A boxed section in measure 38 is labeled (02579).

Example 3.27

Another example of this usage, the concluding chord of the canon in m. 61 of the second movement, is shown in example 3.28.

Example 3.28 shows a musical score with two staves. The top staff is in bass clef and the bottom staff is in treble clef. Measures 59, 60, and 61 are shown. Measure 61 is marked *f*. A boxed section in measure 61 is labeled (02579).

Example 3.28

These supersets are used frequently throughout the work, although they are not as prevalent as the (0257).

Hindemith consolidates traditional and twentieth century harmonic practices in the sonata. Traditional harmony, including V-I cadences and leading tones, often marks the consonant pillar chords at main cadences which support the important medium to long-term harmonic centers of the work. F is the main pitch center of the work; other closely related pitch centers are organized in a cyclical progression which provides a strong formal/harmonic foundation for the sonata. The fifth-related interval sets of the first theme also provide organization and unity to the harmonic and melodic aspects of the work in a similar fashion to the way chords and scales provide a sense of order in tonal music.

Hindemith's limited use of traditional harmonic formulas, as well as his chromatic alteration of such formulas and the avoidance of key-centric passages, leaves few places for the ear to recognize a tonic that lasts for any substantial time. This presents a challenge to audiences and performers and requires them to be sensitive to the long-range background harmonies to discover the underlying links to tonality. The continuous motion from center to center is accomplished by the specific techniques of extensive chromaticism, sequence, scalar motion (chromatic, whole-tone, and diatonic), planing trichords and tetrachords, and elision. Although other harmonic forces are certainly at work in this sonata, the organization is driven by these main devices.

## CHAPTER 4: CONCLUSIONS FOR PERFORMANCE

The relevance of an analysis of the form of the work to an effective performance is hardly debatable. Location of the themes, their recurrences and modifications, as well as analysis of the harmony provides an understanding of musical direction, goals, and organization that is essential to the communication between the performers and the audience. Analysis alone, however, cannot answer all questions a performer may have about the performance of the work. Practice and performance of the work also provide an understanding of the work and strengthen communication with the audience. This chapter will discuss some observations from analysis, practice, and performance that guide specific performance decisions and preparation techniques.

The overall interrupted sonata form movement that spans the work, as discussed in the earlier chapters, brackets the formally self-contained internal movements. Because of this compound structure, the performers must decide whether to treat the sonata as a four movement work or a continuous composition. Even though the work is subdivided into four movements, there are many indicators that it should be treated as a continuous composition. Besides the obvious thematic connection of the first and last movements, the themes of this work are undeniably linked by intervallic content, as illustrated by the common pitch class sets discussed in chapter 2. In addition, the repeated use of the particular set (F, G, B-flat, C) shows a common thread of melodic material which links the parts of the work more closely than separable movements. The final cadences of the movements also indicate a tendency towards continuation. The first

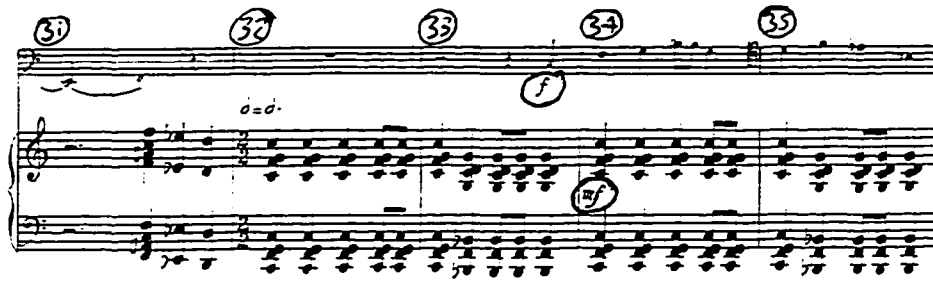
movement ends inconclusively, unable to support an extended break before the second movement. Its cadence is rhythmically and tonally indecisive as it provides only a brief return to tonic on the last note which falls on a weak beat. The A in the trombone also lends connection, as mentioned in chapter 2, by foreshadowing the first note of the second movement. At the close of the second movement the cadence provides slightly more finality, though the ritard (mm. 97-100) that helps to provide repose, which is present in most performances of the work, is not notated in the score. Although this cadence can support a longer pause, the fermata over the quarter rest in m. 100 gives the indication that the work was intended to continue with only a brief pause between the movements. The attacca connection between the third and fourth movements, with the F in the piano at the end of the third movement carrying through into the fourth, also provides continuation. The work's thematic connections, common pitch class sets, and connections between movements are compelling factors that show the sonata is a continuous composition and should be viewed as such in performance.

In addition to continuity, the formal analysis of the work identifies the relative importance of melodic gestures and therefore guides the balance between the instruments. As in most music, themes and main melodic ideas are to be brought out while other lines take an accompanying role. In much of this music the roles of the two parts are readily identifiable, but in some areas it is more difficult to distinguish melody from harmony. Example 4.1 gives an example of one of these areas, mm. 7-15 of the third movement. The piano begins a right hand ostinato, to which a descending chromatic bass line in the left hand and an ascending

chromatic line in the trombone are added. Although any of these lines could be viewed as an accompanimental figure, the relation of the ostinato figure to the first theme of the movement, as discussed in chapter 2, indicates that it should be emphasized, with the chromatic lines providing accompaniment and impetus for the drive to the cadence at m. 15.

Example 4.1

The function of this ostinato figure is very different than that of mm. 32-35 of the same movement, shown in example 4.2. The ostinato in this example is established and then joined by an easily identifiable theme which assumes the prominent role, as shown by the dynamics.



Example 4.2

Example 4.3, mm. 15-20 of the third movement, is another excellent example of analysis providing direction for balance between the parts. The indication of forte in the trombone is a reduction in volume to allow the presentation of the theme in the piano to project. This change in role for the trombonist could easily be missed, especially because the phrasing does not indicate a change at that point.



Example 4.3

At times, the texture is such that the trombone and piano parts are of equal importance as demonstrated by example 4.4, a stretto of the head motive of



the first movement's second theme, mm. 62-64. The performers in this passage should strive to be equally balanced and rhythmically aligned.



Example 4.4

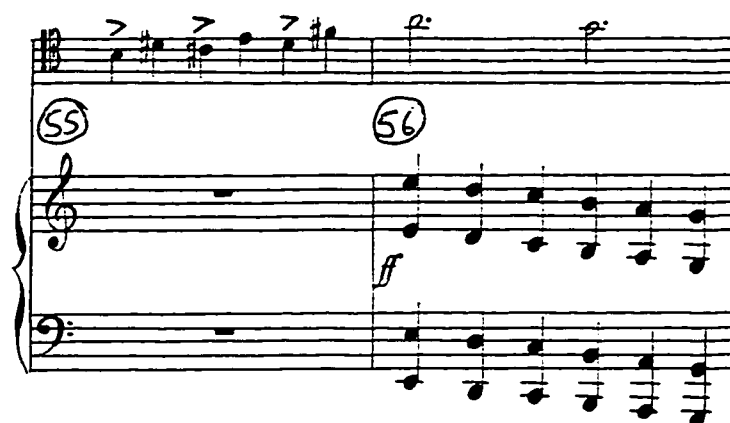
Another example of this type of polyphonic texture is shown in example 4.5. This passage of involved composite rhythm, mm. 9-12 of the fourth movement, will need particular attention to its synchronization in order to be effective.

This musical score shows six staves for measures 8 through 13. The top three staves (measures 8-10) are for a single melodic line. The bottom three staves (measures 11-13) are for a piano accompaniment. The piano part is highly complex, featuring a dense polyphonic texture with many voices. Handwritten annotations include circled measure numbers 8, 9, 10, 11, 12, and 13, and dynamic markings such as *mf*, *p*, and *mf*. There are also some handwritten notes and symbols, including a '2' and a 'p'.

Example 4.5

With these varied textures, sometimes switching quickly, a knowledge of the form is invaluable to the performers.

Rhythmic feel can also shift quite quickly in this work with changing meter and accents used to vary the steady pulse. An important example of cross rhythm, m. 55 of the third movement, was mentioned earlier in a discussion of sequences. This line in the trombone should be played with metric accents on the first, third, and fifth notes of the measure, as shown in example 4.6, rather than on the first and fourth because of the drive of the sequenced thirds to the E of measure 56.



Example 4.6

Because this trombone line is within the first theme, the original statement of the sequence in m. 4 should also be performed as a three-beat measure--a hemiola against the piano's two-beat pulse. These changes of meter and the displaced metric accents in the piano ostinato of m. 8-14 adds to the unpredictable nature of this movement, which will be discussed shortly.

The performers may also benefit from aural skills work on the (0257) and related sets that are fundamental to the piece. The trombonist, in

particular, could improve accuracy as there are a considerable number of leaps throughout the work, many of which are related to the (0257) set. A particular passage that can present difficulty, the eighth-note figures from the second theme of the first movement, mm. 19-22, is shown in example 4.7. The figure in m. 20 is based upon the (027) subset of the (0257) while the figure in m. 21 is based on the (025) subset.



Example 4.7

This minor difference can cause the bottom note to be missed. Almost all of the occurrences of this figure are based on the (027) set, so the example in m. 21 above and the other two similar spots in the fourth movement, m. 23 and m. 30, are more likely to be missed.

Along with analytical knowledge of the sonata, the performers' musical sense when practicing and performing the work also contributes to an understanding of the work. For example, the second theme of the first movement, shown in example 4.6, has a mood quite different from that of the first theme. Although the trombone part is not marked *leggiero*, this approach would be appropriate, taking into account the very light staccato accompaniment in the piano. Mood is also important in the third

movement which is titled Swashbuckler's Song. The performers should attempt to portray the rollicking flamboyance of a swordsman and communicate the steady, but occasionally unpredictable, rhythm of a sword fight which Hindemith has woven into this movement.

Measures 65-72 of the first movement, shown in example 4.7, also relies on the performers' musical sense. In this passage the trombone and piano must crescendo equally over five measures to provide the anticipation of an arrival in m. 72. The rests in the piano on the downbeat of m. 72 are a much more effective shock to the audience, and the performers, if the crescendo is evenly matched and powerful.

The musical score consists of three systems of two staves each. The first system covers measures 65 to 67, with dynamics starting at *p* and reaching *f* by measure 67. The second system covers measures 68 to 70, with dynamics starting at *mf* and reaching *f* by measure 70. The third system covers measures 71 and 72, with a rest on the downbeat of measure 71 and a powerful arrival in measure 72. The score includes various musical notations such as notes, rests, and dynamic markings.

Example 4.8

A crescendo is involved in making the end of the first and fourth movements effective as well. The planing chords in the piano, of interest at the ends of both movements can be heard more readily if the trombonist reduces the volume upon reaching the sustained note and then crescendos to the end. The reduction in volume is not marked in either movement, but in the interest of hearing the more important motions of the piano, it should be added in each case. The crescendo which is marked at the end of the first movement should also be added to the end of the last movement to strengthen the ending of the work.

Performers who choose to delve into the structure of this work will find that their understanding of its organization will benefit their performance. Hindemith's techniques and the relationships he forged between the components of this well-developed composition provide rewarding study for anyone desiring a greater understanding of the links between the chromaticism of twentieth-century music and tonality. Further study of the rhythmic aspects of the work could also prove rewarding. Continuing analysis, practice, and performance of this work will provide performers with a more thorough knowledge of the organization of the work, and thereby improve the communication of the work with the audience.

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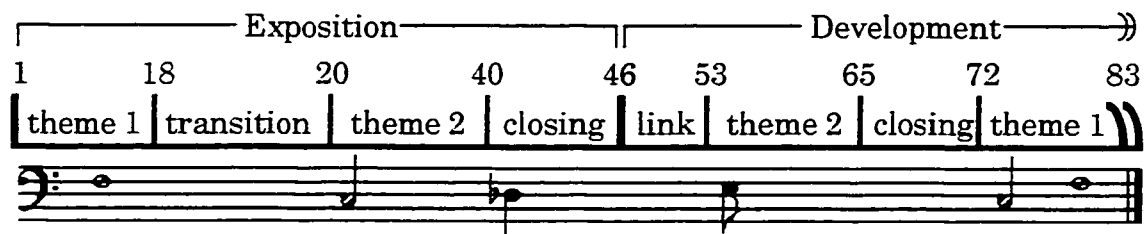
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## APPENDIX: FORM CHART

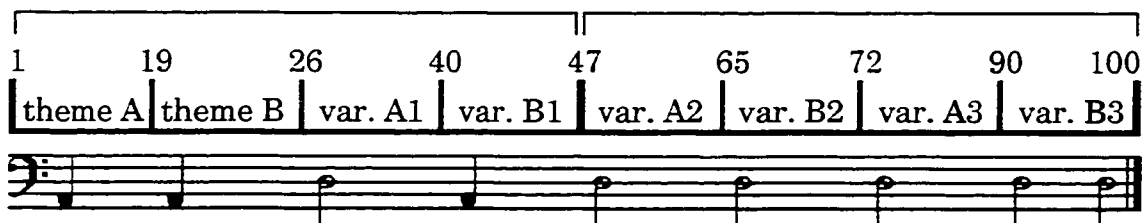
### First movement

◇ incomplete sonata form



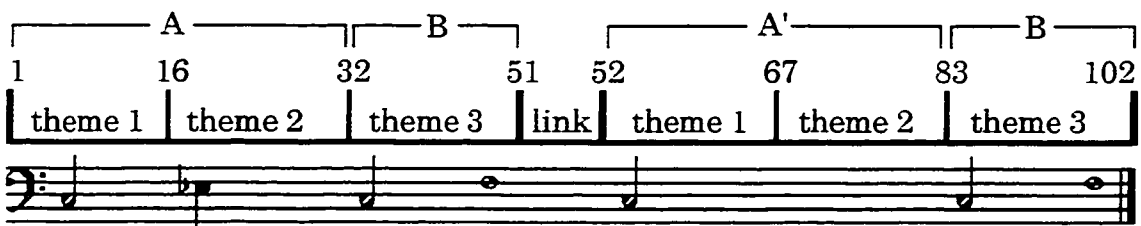
### Second movement

◇ two-part double-variation form



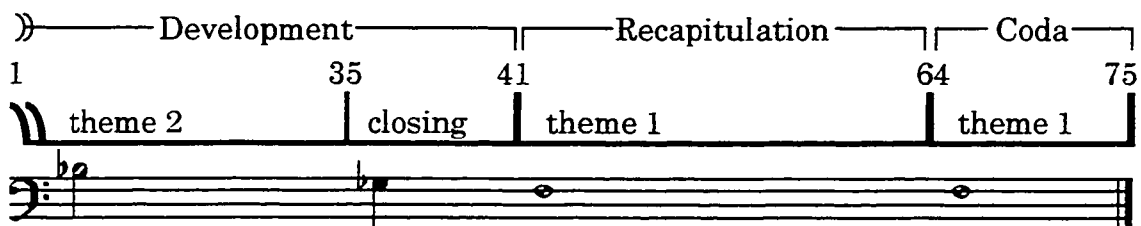
### Third movement

◇ binary form



### Fourth movement

◇ completion of first movement sonata form  
(theme numbers refer to first movement themes)





## VITA

Ross Walter was born in Freeport, Illinois, and grew up in Helena, Montana. He received his Bachelor of Music Education degree in 1987 at the University of Idaho. He then attended Louisiana State University as a graduate assistant and graduated with his Master of Music degree in 1990. He began his Doctorate in 1992, again as a teaching assistant, and was selected by the School of Music Faculty in 1994 to receive the Most Outstanding Graduate Teaching Assistant Award. Mr. Walter is a performing musician on both trombone and euphonium, maintains a private studio of low brass students, and plans to pursue a college teaching career.

# DOCTORAL EXAMINATION AND DISSERTATION REPORT

**Candidate:** Ross Alex Walter

**Major Field:** Music

**Title of Dissertation:** Paul Hindemith's Sonata for Trombone: A  
Performance Analysis

**Approved:**

*Larry B. Campbell*

Major Professor and Chairman

*John M. Larkin*

Dean of the Graduate School

## EXAMINING COMMITTEE:

*James R. West*

*John R. Powell*

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Co-Chair

**Date of Examination:**

March 22, 1996